

Tim *[Signature]*  
Percy *[Signature]*  
Return to Ray *[Signature]* **RLS**

MONITOR WELL PRE-SPUD PROPOSAL

- 1) WELL NAME/NUMBER: BLM-27
- 2) PROPOSED LOCATION: (a) General (on or off-site) Off-site  
(attach map Site Area BLM Land)  
(b) Sect 34 Twnshp 20S Rng 3E NE ¼ NE ¼ SW ¼ SE ¼
- 3) WELL PARAMETERS:  
(a) Est. total depth 350 (ft)\* (b) Est. ground elevation @4730 ft  
(c) Anticipated stratigraphy:  
Alluvium (Santa Fe Group) from 0 ' to 250 ' (depth)  
Andesite (possibly Tuff) from 250 ' to TD ' (depth)  
(d) Anticipated water bearing horizon(s):  
Alluvium (?) at 245 ' (depth)  
at \_\_\_\_\_ ' (depth)  
(e) Anticipated static water level 232 ' (depth)
- 4) WELL PURPOSE/JUSTIFICATION (attach maps and table if needed):  
To assess groundwater quality, determine the presence or absence of saturated alluvium,  
and determine bedrock lithology.
- 5) PROPOSED DRILLING PARAMETERS:  
(a) Drilling method(s): (air/foam/mud rotary/auger/etc.)  
Mud Rotary from 0 ' to 100 ' (max)  
Air-Foam Rotary from 100 ' to TD ' (depth)

Air-foam method: "Quik-Foam" surfactant/water mixture used in conjunction with filtered compress air.

Mud-rotary method: Bentonite mud/water mixture.

\* or 250' into bedrock

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- (b) Lithology sampling - collect sample every:

5' intervals Method Grab from 0 to TD (depth)  
Core type 6" Dennison from \_\_\_\_\_ to \_\_\_\_\_ (depth)  
2" Christiansen from \_\_\_\_\_ to \_\_\_\_\_ (depth)

- (c) Anticipated drilling additive(s): E-Z mud (if needed)

7) PROPOSED WELL COMPLETION DESIGN/MATERIALS

(a)	Casing:	<u>Material</u>	<u>Diameter</u>	<u>From</u>	<u>To</u>	<u>Comments</u>
	Temporary	_____	_____	_____	_____	
	Surface	_____	<u>10"</u>	<u>0</u>	<u>100' max</u>	
	Screen (10')	<u>Stainless ++</u>	<u>4"</u>	<u>To be determined from Geophysical logs</u>		<u>0.02"</u>
	Completion Pipe	<u>stainless +</u>	<u>4"</u>	<u>0</u>	<u>TD</u>	<u>*</u>

Standard material: Blank riser, silt trap, locking cap

N/A Data not available at this time

\* for deep completions (450 feet or more)

\*\* for shallow completions

+ Type 304, Schedule 5 stainless steel

Type 304, Schedule 10 stainless steel

++ Regular strength screen, extra strength screen used below 450 feet

- (b) Filter pack: Standard 8/20 and 16/40 sand and bentonite plug(s), grout to surface.


8) PROPOSED WELL DEVELOPMENT

- (a) Surge and bail with surge block and bailer.

- (b) Pump with submersible pump until parameters stabilize.

9) WELL AUTHORIZATION

- (a) Proposed by Geoscience Consultants, Ltd.

(b) Authorized Robert Mitchell NASA   
(name) (representing) (signature)